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AUTHOR Nicassio, Frank J.; And Others
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ABSTRACT

This article describes Allegro, a computer-assisted report writing procedure developed by a rural school psychology staff to aid in the rapid development and creation of high quality psycho-educational reports. The program's structure, procedural steps, and function are detailed and examples of the program structure are provided through printouts from the Allegro Manual disk. Briefly discussed are field-test and blind-study results which indicate that Allegro is conserving up to 70% of staff time expended on report writing as well as producing documents that are judged to be of higher communicative quality than hand-written reports. A list of references completes the paper. (Author/JB)

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ALLEGRO: A CASE OF COMPUTER SUPPORT IN A RURAL SETTING

by

Frank J. Nicassio, PhD
and
The Staff of the Child Development Program
Umatilla Education Service District
P.O. Box 38
Pendleton, OR 97801

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SUMMARY: This article describes Allegro, a computer-assisted clinical report writing procedure developed by a rural school psychology staff to aid in the rapid development and creation of high quality psycho-educational reports. The program's structure, procedural steps, and function are detailed. Briefly discussed are field-test and blind-study results indicating that Allegro is conserving up to 70% of staff time expended on report writing in addition to producing documents that are judged to be of higher communicative quality than hand-written reports.

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Frank J. Nicassio, PhD
and
The Staff of the Child Development Program [1]
Umatilla Education Service District
Pendleton, Oregon

INTRODUCTION

The clinical staff of the Child Development Program is responsible for psychological and educational assessment, counseling, and educational program consultation for 13 rural school districts in Northeastern Oregon. Eight clinical specialists provide direct and support service on an itinerant basis to youngsters ranging from 2 through 18 years of age exhibiting problems associated with retardation, learning disability, emotional disturbance, and a variety of counseling concerns.

Producing psychoeducational reports to convey testing outcomes, interpretations, and recommendations resulting from observation and assessment is a major undertaking for clinical staff in terms of both time expenditure (Eitel et al., 1984) and expertise (Sattler, 1982.)

In an attempt to reduce the amount of time required to create and write psychoeducational reports while at the same time improve their communicative quality, a computer assisted report writing program was created, similar to others recently reported (Hoffman, 1985; Mercadal, 1984; Training and Model Exchange Project, 1984.) The program, Allegro: A computer assisted clinical report writing procedure, has achieved its objectives as is reported reported elsewhere (Nicassio & Moore, 1985.) This article discusses Allegro's structure and function.

PROGRAM STRUCTURE

Allegro provides a way of quickly generating clinical reports by means of the Apple Writer // word processing program, and a set of special materials which include: 1) a user's "Program Manual"; 2) a "Worksheet" to create a working draft; 3) a set of diskettes labelled "Allegro Report" that enable a computer operator to word process the final document; and 4) a set of diskettes labelled "Allegro Manual" that enable the modification and reprinting of the Program Manual.

Six functional components of a psychoeducational evaluation report were identified and given keyword descriptors. The six components and associated keywords are: 1) Referral Reason (REF); 2) Tests Administered (TAD); 3) Observations in Test Situation (OBS); 4) Test Results (RES); 5) Interpretation of Data (INT); and 6) Recommendations (REC), and correspond to the chapters of the Program Manual.

Each of the six components was further subdivided into major conceptual categories under which could be subsummed textual passages frequently used by various professionals in preparing reports. These textual passages were

stored as text files on the Allegro Report disks and listed as menu choices in the 100 page Program Manual.

To provide an example, the chapter containing descriptions of frequently administered tests is identified as TAD (Tests Administered) and subdivided into seven major categories: 1) intelligence scales, 2) achievement measures, 3) developmental/readiness scales, 4) personality inventories/adaptive behavior scales, 5) auditory/language measures, 6) visual/visual-motor measures, and 7) behavioral observations. To continue the example, the major category "intelligence scales" lists 14 separate measures which are identified in the Program Manual with keyword descriptors that are, in turn, used to access the test descriptions stored on disk. The keyword descriptors for currently defined intelligence scales are presented here for both your edification and puzzlement: BINET, CMMS, DAP, K ABC, LEITER, MC-CARTHY, RAVEN C, RAVEN S, SIT, SOMPA, WAIS R, WISC R, WO JO I, WPPSI.

The chapter listing recommendations (REC) provides another example of program structure. The table of contents for this chapter is reproduced here, directly from the Allegro Manual disk:

SECTION VI: RECOMMENDATIONS (REC)

SECTION CONTENTS

REC	0.00	WILD CARD
REC	1.00	NO SERVICE
REC	4.00	APPROPRIATE PLACEMENT/CLASSROOM ADJUSTMENT/RETENTION/ HANDICAPPING CONDITION/HEALTH IMPAIRMENT/MAL TREATMENT/ SOCIO-CULTURAL VARIATION/RE-EVALUATION
REC	8.00	LEARNING DISABILITY/HYPERACTIVITY/CONTROL FACTORS
REC	12.00	NEUROLOGICAL/NEURO-MOTOR IMPAIRMENT
REC	16.00	ANXIETY/WITHDRAWAL/SEVERE EMOTIONAL DISTURBANCE
REC	20.00	DEVELOPMENTAL/M.R./D.D./GIFTED
REC	28.00	ATTENDANCE/DELINQUENT/UNORTHODOX/SUBSTANCE ABUSE/ SOCIAL PERCEPTION/BEHAVIOR MANAGEMENT
REC	32.00	BEHAVIOR MANAGEMENT IN CLASSROOM
REC	36.00	BEHAVIOR MANAGEMENT AT HOME
REC	40.00	INDIVIDUAL/GROUP COUNSELING
REC	44.00	PARENT/FAMILY COUNSELING
REC	46.00	THERAPEUTIC INTERVENTIONS
REC	48.00	READING
REC	52.00	LANGUAGE
REC	56.00	SPELLING AND WRITING
REC	60.00	MATHEMATICS
REC	64.00	CONTENT AREAS
REC	68.00	INDEPENDENT LEARNING/STUDY SKILLS/SELF-INSTRUCTION
REC	72.00	LEARNING PLATEAUS/LEARNING STYLES
REC	74.00	INSTRUCTIONAL INTERVENTIONS
REC	76.00	HEALTH/NUTRITION/MEDICATIONS
REC	80.00	TREATMENT COORDINATION/SUPPORT/CARRYOVER
REC	84.00	RECORD KEEPING/DATA COLLECTION/MONITORING PROGRESS
REC	88.00	REFERRAL TO OTHER RESOURCES

We may peek one layer deeper into the program's structure by noting the seven subdivisions into which REC 8.00 is segmented:

REC 8.00 LEARNING DISABILIITY/HYPERACTIVITY/CONTROL FACTORS

- REC 8.10 NEED FOR SPECIAL EDUCATION
- REC 8.20 ATTENTION CONTROL/DISTRACTABILITY
- REC 8.30 MEMORY DEFICITS
- REC 8.40 MODALITY STRENGTHS AND WEAKNESSES
- REC 8.50 INCREMENTAL STEPS/SUCCESSIVE APPROXIMATION
- REC 8.60 MEDICATIONS
- REC 8.70 AFFECTIVE CONSIDERATIONS

The final program layer is revealed by citing a specific text file subsumed under one of the seven subdivisions. REC 8.35, which is subsumed under REC 8.30 MEMORY DEFICITS, is selected as the example:

REC 8.35 Examples of how (Name/he/she) could be helped to compensate for (his/her) severe memory deficit include: 1) use frequent practice during early stages of learning; 2) provide many opportunities for review of already learned skills; 3) use "direct instruction" materials that rely on explicit cues; 4) provide visualization training; 5) use snapshot flashcards to teach classmates' names; 6) use a daily calendar or schedule to cue performance.

This recommendation is accessed and inserted into the final draft of the report by simply addressing the keyword, REC 8.35.

Other example recommendations exhibited in the Program Manual and stored on disk include:

REC 44.00 PARENT/FAMILY COUNSELING

REC 44.40 FAMILY RELATIONSHIPS/SIBLING RELATIONSHIPS

REC 44.45 Due to difficulties in sibling relationships, (parent Name) will be seen (weekly/bi-monthly/monthly) on an individual basis for family consultation focused on methods of dealing effectively with children.

REC 52.00 LANGUAGE

REC 52.60 LANGUAGE PRAGMATICS

REC 52.65 Institute a language pragmatics program that emphasizes the use of language in the context of the (classroom/playground/cafeteria/home). In each of these environments, (Name/he/she) should be prompted to 1) maintain eye-contact; 2) express personal feelings; 3) observe turn-taking; 4) articulate; 5) produce complete thought utterances; 6) stay on a topic to a logical conclusion. Additional direction should be sought from the language therapist.

REC 68.00 INDEPENDENT LEARNING/STUDY SKILLS/SELF-INSTRUCTION

REC 68.20 TAILORED METHODS

REC 68.23 Encourage (Name/him/her) to use the following strategy when (he/she) makes an error or becomes confused: 1) do not erase error, but leave it in view for comparison learning; 2) have (Name) backtrack and explain (his/her) decision steps to the point of the error or confusion; 3) with constant reinforcement from the teacher, have (Name) slowly verbalize through the error point and then beyond; 4) return to beginning and have (him/her) repeat the sequence without error; 5) place emphasis on the thinking process rather than on good, bad, right, or wrong.

To construct a report, the writer enters onto the Worksheet the filenames of options (e.g. REC 68.23) selected from the Program Manual along with his or her own unique comments which are referred to as "wildcards." A computer operator then uses the Worksheet, Apple Writer //, and the Allegro Report disks to word process and print the actual report. Since the Worksheet allows the writer to extend, modify, or ignore computer files, the final product is a printed report containing computer-stored-text of general applicability, and writer-composed-text relevant to the unique characteristics of the specific case for whom the assessment was conducted.

Reports may also be created without the use of the Worksheet. A writer may simply dictate filenames and comments to tape for future word processing. A writer may also generate a report at the computer by using the Apple Writer // and Allegro Report disks.

The Program Manual, the Report disks, and the Manual disks are organized in a manner that allows deletion, expansion, and modification of the program by persons other than the creators. A variety of professional orientations can thus be represented by the textual information stored on disk. Allegro provides the user with the means of printing an entirely new manual reflecting his or her own unique deletions, expansions, and modifications. The procedure for modifying Allegro (along with report writing instructions, word processing instructions, etc.) are described in the Program Manual.

User responsibility for the accuracy, validity, and reliability of printed statements, interpretations, judgments, and recommendations is not only emphasized, but made possible by means of the modular design, writer-controlled options, and "wild cards" which are integral parts of all Allegro materials.

PROGRAM FUNCTION

We are now at the end of the first cycle of program improvement. Eight intermediate and local educational agencies throughout Oregon have been aiding us with Allegro's procedural refinement. Only 4 of the 8 sites have yet completed the 4-month debugging and data collection process required of them, but their experiences are encouraging because they report savings of between 50% and 70% in report-writing time. To place these figures in perspective, we

note the following. Our own staff generates between 350 and 400 reports each academic year. Using a conservative 2-hours per report estimate (test sites reported averaging between 3 and 10 hours to write final copy reports prior to computer-assistance), we compute between 700 hours (17.5 40-hour weeks) and 800 hours (20 40-hour weeks) of report writing annually. The time-saving being experienced by our test-sites is, we believe, significant.

Allegro has also been subjected to blind-study (Nicassio & Moore, 1985.) On the average, Allegro generated reports were rated to be of higher quality than those prepared without computer assistance. This is particularly noteworthy in that report-raters had difficulty identifying the report generation method at levels higher than chance. On successive trials of the experiment, we will be trying to modify the basic program in such a way that it more closely approximates an "ideal report type" that was defined as one result of the current blind-study.

The ease of updating computer-stored information has made it possible to gradually and jointly create a collegially validated knowledge-base of clinical insights. Through successive stages, professional peers have had the opportunity to create, debate, change and thus refine program content in a stepwise manner. The justification to colleagues of one's suggested inclusions has had, we believe, a salutary effect on the program's quality. In short, the microcomputer's flexibility and Allegro's pragmatic and modular design have provided us with a unique opportunity to capture, organize, codify, distribute and validate collective knowledge and expertise among a rural based staff that has few opportunities for face-to-face consultative support during problem exploration and solution.

A major function of Allegro, then, is its ability to place a well developed knowledge-base at the disposal of itinerant staff working in the relative isolation of rural areas. The "collective insights" contained on disk and in the Program Manual have proved to be thought provoking stimuli during brainstorming and problem solving. Staff thus has an opportunity to broaden their own perspective of a problem by tapping into the thinking of their colleagues--an important consideration for personnel separated from each other by miles of country roads.

NOTES

[1] Allegro was created as a team effort with the following persons who are gratefully acknowledged: Dr. Richard Huston, Rosemary French, John Robinson, Walt Thomas, Mike Daschbach, Pat Costello, Kevin Moore, and Norma Michael.

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